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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,491	10/20/2003	Kunio Sato	9281-4675	7876

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EXAMINER	
YACOB, SISAY	

ART UNIT	PAPER NUMBER
2635	

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/689,491	SATO ET AL.	
	Examiner	Art Unit	
	Sisay Yacob	2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1 The application of Sato et al., "Electronic device having touch sensor" filed on October 20, 2003 has been examined.

Claims 1- 36 are pending

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by US publication of Suzuki (20040043696).

As to claim 1, Suzuki discloses an electronic device comprising a casing and a touch sensor capable of detecting a human body approaching or touching the casing (Page 1, Par. 0006 –0007; Items 10 and 12 of figure 1), wherein the touch sensor comprises an electrode of a predetermined area provided in an inner portion of the casing at a distance from an outer surface of the casing (Items 12 and 20 of figures 1 and2) and detecting means (Item 42 of figure 3) for detecting a change of capacitance from the electrode when the human body approaches or touches the outer surface of the casing (Pages 1-2, Par. 0013).

Rejections - 35 USC § 103

8 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9 Claims 2-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of US patent of Griffiths et al. Montgomery et al., (4,703,573) and further in view of US patent of Eichelberger et al., (4,145,748).

As to claim 2, the electronic device according to claim 1, however, Suzuki does not expressly discloses a detecting means that includes clock signal generating means for generating a clock signal, delaying means for providing a delay in a rising edge of the clock signal according to the capacitance detected by the electrode when the human body approaches or touches the outer surface of the casing, means for generating a signal depending on an amount of the delay, with the clock signal not passing through the delaying means defined as a reference, and A/D converting means for A/D converting a signal depending on an amount of the change from analog to

digital. In a similar field of endeavor, Montgomery et al., discloses an electronic device with a capacitive touch a detecting means (Col. 7. lines 22-29, 57-68; Item 30 of figures 2 and 3) that incorporate clock signal generating means for generating a clock signal (Col. 16, lines 15-34; Item 342 of figure 16), and delaying means for providing a delay (Col. 8, lines 22-37; Col. 12, lines 28-37; Items 166 and 176 of figure 11).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention to modify the electronic device comprising a casing and a touch sensor capable of detecting a human body approaching or touching the casing of modify the Suzuki, by incorporating the electronic device with a capacitive touch switch and a detecting means with clock signal generating means and delaying means of Montgomery et al., in order to have an electronic device comprising a casing and a touch sensor capable of detecting a human body approaching or touching the casing that incorporate that includes clock signal generating means for generating a clock signal, delaying means for providing a delay in a rising edge of the clock signal according to the capacitance detected by the electrode when the human body approaches or touches the outer surface of the casing, means for generating a signal depending on an amount of the delay, with the clock signal not passing through the delaying means defined as a reference, because Suzuki discloses an electronic device comprising a casing and a touch sensor capable of detecting a human body approaching or touching the casing and Montgomery et al., discloses an electronic device comprising a casing and a touch sensor capable of detecting a touch with the clock signal not passing through the delaying means defined as a reference to the

counter and a means for generating a signal depending on an amount of the delay to control output of the electronic device. However, the combination of Suzuki and Montgomery et al., does not expressly disclose the electronic device further comprising A/D converting means for A/D converting a signal depending on an amount of the change from analog to digital. In a similar field of endeavor, Self-optimizing touch pad sensor circuit comprising a plurality of capacitive touch pads using digital techniques Eichelberger et al., discloses A/D converter (Item 16 of figures 1 and 2).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention to modify the combination of Suzuki and Montgomery et al., by incorporating the A/D converter of Eichelberger et al., in order to have an electronic device comprising a casing and a touch sensor capable of detecting a human body approaching or touching the casing that incorporate that includes clock signal generating means for generating a clock signal, delaying means for providing a delay in a rising edge of the clock signal according to the capacitance detected by the electrode when the human body approaches or touches the outer surface of the casing, means for generating a signal depending on an amount of the delay, with the clock signal not passing through the delaying means defined as a reference and A/D converting means for A/D converting a signal depending on an amount of the change from analog to digital, because the combination of Suzuki and Montgomery et al., disclose an electronic device comprising a casing and a touch sensor capable of detecting a human body approaching or touching the casing with the clock signal not passing through the delaying means defined as a reference to the counter and a means for generating a

signal depending on an amount of the delay to control output of the electronic device and one skilled in the art would recognizes incorporating the A/D may improve the capacitive detection.

As to claim 3, the electronic device according to claim 2, further, Suzuki discloses the detecting means detects a change of a facing area of the electrode and the human body (Page 3, Par. 0035; Items 98 and 100 of figure 5).

As to claim 4, the electronic device according to claim 2, further, Suzuki discloses the detecting means detects an interval that the human body faces the electrode (Page 1, Par. 0006; See figure 1).

As to claim 5, the combination of Suzuki and Montgomery et al., disclose all aspects of the claimed invention as set forth in the rejection of claim 2 including a plurality of the electrodes are provided (Item 12 of figure 1 of Suzuki), each electrode including the delaying means and the means for generating a signal depending on the amount of the delay of a signal passing through the corresponding delaying means, with a common clock signal as a reference (See figure 11 of Montgomery et al.).

As to claim 6, the electronic device according to claim 1, further, Sukuki discloses the electrodes are arranged along a shape of the outer surface so as to make each

portion of the electrodes at equal distance from the outer surface of the casing (See figure 1).

As to claim 7, the electronic device according to claim 1, further, Suzuki discloses wherein the casing forms an appearance of a toy and the outer surface of the casing corresponding to a portion provided with the electrode is defined as a touch portion with the human body (See figure 1).

As to claim 8, the electronic device according to claim 3, further, Suzuki discloses the detecting means detects an interval that the human body faces the electrode (Page 1, Par. 0006).

As to claims 9, 10 and 11, the combination of Suzuki and Montgomery et al., disclose all aspects of the claimed invention as set forth in the rejection of claims 3, 4 and 8 including a plurality of the electrodes are provided (Item 12 of figure 1 of Suzuki), each electrode including the delaying means and the means for generating a signal depending on the amount of the delay of a signal passing through the corresponding delaying means, with a common clock signal as a reference (See figure 11 of Montgomery et al.).

As to claims 12-19, the electronic device according to claims 2-5 and 8-11, further, Sukuki discloses the electrodes are arranged along a shape of the outer surface

so as to make each portion of the electrodes at equal distance from the outer surface of the casing (See figure 1).

As to claims 20-36, the electronic device according to claims 2-6 and 8-19 further, Suzuki discloses wherein the casing forms an appearance of a toy and the outer surface of the casing corresponding to a portion provided with the electrode is defined as a touch portion with the human body (See figure 1).

Conclusion

17 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following cited arts are further to show the sate of art related to electronic device having touch sensor.

In the US publication (20040178997) Gillespie et al., discloses an object position detector with edge motion feature and gesture recognition.

In the US patent (5,465,091) Nishino et al., discloses a touch sensor, which detects contact of a finger, etc. with a plate.

In the US patent (5,796,389) Bertram et al., discloses a touch screen having reduced noise while providing high resolution.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sisay Yacob whose telephone number is (571) 272-8562. The examiner can normally be reached on Monday through Friday 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (571) 272-3068. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sisay Yacob

2/2/2006

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